28

MIDDLEFIELD - ELLIS - WHISMAN (M.E.W.) SITE
WA No. 54-04-9NM6

TECHNICAL COMMENTS
ON
SOIL REMEDIATION REPORT
FOR
NEC ELECTRONICS INC.
501 ELLIS STREET
MOUNTAIN VIEW, CALIFORNIA

Document Control No. 62121.00.54.577/06.b
23 pages

Prepared for:

CONTRACT NO.: 68-W9-0054
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
75 Hawthorne Street
San Francisco, California 94105

Prepared by:

B&V WASTE SCIENCE AND TECHNOLOGY CORP.
2300 Clayton Road, Suite 220
Concord, California 94520

July 8, 1992

TECHNICAL COMMENTS
ON
SOIL REMEDIATION REPORT
FOR
NEC ELECTRONICS INC.
501 ELLIS STREET
MOUNTAIN VIEW, CALIFORNIA

A Soil Remediation Report (SRR) for the above referenced facility was submitted to the Environmental Protection Agency (EPA) by NEC Electronics Inc. (NEC). These comments on the SRR have been prepared and are submitted by B&V Waste Science and Technology Corp. (BVWST) in compliance with EPA's request. This is one of the document reviews outlined in the RD/RA Oversight Work Plan for Work Assignment No. 54-04-9NM6, Middlefield-Ellis-Whisman (MEW) site.

The comments are divided into Discussion, General Comments, Specific Comments, and Recommendations. The Discussion section presents an overview of the document and the engineer's general impression of the document, and whether the document has achieved its stated objectives. General Comments refer to comments which relate to the general approach of the SRR, issues that apply to the entire report, and omissions in the SRR relative to the requirements of the CERCLA § 106 Order (the ORDER). Specific Comments are technical comments that relate to a particular page and paragraph of the SRR. If additional information would resolve the comment, it is discussed and recommended with the comment. Significant recommendations are repeated in the Recommendations section and the comment that relates to the recommendation is referenced.

The SRR has been reviewed for compliance with the five requirements for progress reporting and one requirement for confirmatory sampling enumerated in the ORDER. According to the CERCLA § 106 Order, Section IX.D.2.d, Progress Reports shall detail Facility Specific Work. According to Section XV, at a minimum, Progress Reports shall:

a) describe the actions which have been taken to comply with this Order during the prior month, including a general description of activities commenced or completed during the reporting period;

b) include all results of sampling and tests and all other data received by Respondent and not previously submitted to EPA;

c) describe all Work planned for the next reporting period, with updated schedules that show overall Work completed, Work planned for the next reporting period, and the overall project schedule for Work completion;

d) describe all problems encountered and any anticipated problems, any actual or anticipated delays; and

e) include an interpretation or explanation of the data.

According to Section IX.D.2.f, a Confirmatory Sampling Report shall:

f) be submitted for EPA approval at the conclusion of soil remediation activities.

In addition, six categories of document deficiencies have been noted by EPA as follows:

(A) Statements that attempt to circumvent EPA's authority or limit EPA's discretion in the future by either (i) implying that Respondent and not EPA, are permitted to make decisions concerning the completeness of the work, or (ii) limiting the scope of work described in the ORDER.

(B) Soil Remediation Report is not based on past data or, where past data are limited, that fails to specify a sampling strategy.

(C) Soil Remediation Report that includes unsubstantiated technical statements and conclusions.

(D) Soil Remediation Report that has insufficient information or is not in compliance with EPA guidance documents.

(E) Technical document having the appearance of being written by either the Respondent, the Respondent's attorney, or both, not the consultant.

(F) Technical document that is filled with opinions that are presented as statements of fact.

The document review of the SRR relative to the five progress reporting requirements and one confirmatory sampling requirement is summarized in Table 1. If a deficiency is identified when addressing any of the requirements, the deficiency type, and comment number of the deficiency is noted on the table. In addition, the deficiency type is identified with the comment, where applicable.

DISCUSSION

Each of the five requirements for progress reporting and one requirement for confirmatory sampling were present. However, it is the opinion of BVWST that the information presented for those requirements is insufficient. Deficiencies noted in the SRR are discussed in the comments which follow and are summarized in Table 1. The following paragraphs summarize major deficiencies and issues BVWST noted during the review of the SRR.

Extent of Excavations

Exploratory borings were installed prior to the soil excavation. Soils from exploratory borings were subject to analytical laboratory analysis for TCE. Where the soil analytical data from exploratory borings indicated that the soil from these borings met the cleanup standard, the exploratory borings were intended to serve as documentation of the limit of contaminated soil. Excavations were originally intended to be extended to a clean soil boring, so that these exploratory borings could serve as side of excavation confirmation samples.

However, some excavations did not extend to the exploratory borings and the limits of the excavation were based on field data. The use of field analytical data to determine the extent of excavation and confirm the absence of contamination is inappropriate. The use of field analytical data should have been limited to screening and the absence of contamination determined with laboratory analytical data. Additional soil sampling is recommended to confirm the extent of contamination in areas where the excavations did not extend to the exploratory sample borings (See General Comment #1).

TCE Presence Exceeding Cleanup Standard

At one location underneath the building, TCE was found in the soil at a concentration of 0.55 mg/kg, thus exceeding the cleanup standard by a minimal amount (0.05 mg/kg). This soil was not removed and the SRR recommended leaving this soil in place. The rationale for leaving this contamination in place appears

reasonable based on data from soil borings taken within the building, but may require additional evaluation of soils outside the building. All the other samples from this boring and adjacent exploratory borings within the building did not contain TCE above the soil cleanup standard. In the vicinity of solvent and waste tanks that were located outside of and adjacent to the building wall, laboratory analytical data of exploratory borings indicated TCE soil contamination exceeding soil cleanup standards. Soil in excess of the soil cleanup standards appears to have been left on site in the vicinity of the tanks. The contamination detected underneath the building may have migrated from the underground storage tanks. It may be desirable to conduct additional sampling to determine if there is evidence of contaminant migration from the vicinity of the underground storage tanks. (see General Comment #2).

GENERAL COMMENTS

These General Comments have been arranged in descending order of BVWST's perception of their importance. It is BVWST's opinion that Comments 1 - 6 represent significant issues.

1. In some areas, the excavations do not extend to the exploratory borings, leading to a potential to leave contaminated materials on-site. Field analytical data were used to determine the extent of soil contamination in these areas without confirmation with analytical laboratory data. The use of Photovac field analytical data to document the extent of contaminated soil in an excavation without supportive analytical laboratory data is inappropriate. The data quality of the field analytical data is only appropriate for screening and not for confirmation purposes. The extent of contamination should be confirmed through the laboratory analysis of additional soil samples, in areas where the excavation does not extend to the exploratory soil borings. Additional confirmation sampling and analysis is recommended at the edge of excavations that did not extend to the exploratory borings used for delineation of contaminated zone. [Deficiency Types: C, D]

2. The SRR indicates that the break in the buried waste line was discovered where the line entered the building. The location of the line break at the wall leads to the possibility that contamination exists directly adjacent to the building wall, with a potential to migrate along the wall and under the building. No sampling was performed directly adjacent to the building wall.

   The underground solvent tank and acid neutralization tank removed in 1984 were located adjacent to the building. These two tanks extended to a depth of approximately eight feet bgs at the bottoms of these tanks. Table 12 indicates contamination exceeding the soil cleanup standard for TCE was detected in exploratory borings R-9 and R-35 at depths from 8.5 to 15.5 feet. At both locations, concentrations of TCE at approximately 9 feet bgs exceeded those reported at approximately 12 feet bgs, indicating that the contamination

originated from above. No further exploratory borings were installed between borings R-9, R-35, and the building wall. Further, at one location underneath the building, TCE was found in the soil at a concentration (0.55 mg/kg) exceeding the cleanup standard by a minimal amount. Contamination in the vicinity of the wall edge may have migrated to exploratory boring R-6 without being detected by exploratory borings R-1 and R-7. This data indicates that potential TCE sources may exist in the soil along the edge of the building and in the soil below the bottom of the previously removed tanks (between borings R-9, R-35, and the building wall). Additional sampling is recommended directly adjacent to the building wall to determine if source areas remain where the waste line entered the building and in the area bounded by exploratory borings R-9, R-35, and the building wall. [Deficiency Types: A, D]

3. Ten percent of the samples submitted for laboratory analysis were subject to analysis for parameters in addition to TCE, but no description was given on how the samples submitted for additional analysis were chosen. The SRR states that these additional parameters were analyzed for documentation purposes. The results of the sample analysis for additional parameters are presented, but are not interpreted or discussed. The SRR should indicate how the samples subject to additional analyses were chosen, clarify the objective "for documentation purposes", and discuss how the sampling and analysis of ten percent of the samples for the additional parameters relates to the objective. A discussion of the results of the analysis for additional parameters should be presented. [Deficiency Type: D]

4. The SRR states the personal protective equipment was disposed of at a sanitary landfill, and some washwaters were disposed of in the sanitary sewer without testing. These actions may be in violation of state regulations for disposal of hazardous waste. The text should provide additional information justifying the disposal of personal protective equipment and washwaters as non-hazardous waste without testing. [Deficiency Type: D]

5. The SRR states that augerholes were excavated to a depth of approximately 16 feet based on groundwater level data. The groundwater level data used to determine the depth of exploratory boring and remedial excavation has not been presented in this SRR and should be presented to enable reviewers to evaluate the adequacy of the vertical extent of soil remediation. [Deficiency Type: D]

6. A review of the analytical and photovac data indicates that the highest TCE concentrations are generally found in the deepest samples taken for each soil boring. The SRR should discuss the relationship between sample depth and TCE concentration. [Deficiency Type: D]

7. The SRR does not include a description of work planned for the next reporting period and updated work schedules, as required in Section XV.A.iii of the Order. The SRR should present plans for work planned for the next reporting period, with updated work schedules, including submittals. [Deficiency Type: D]

8. The Order (Section IX.c.2(c)(2)) states that the Operation and Maintenance Plan is due within 180 days of the initiation of construction. Construction began on November 6, 1991. According to the ORDER, the O&M Plan is due for submittal on May 6, 1992. Requirements of the O&M Plan include provisions for "ensuring the effectiveness of the remedy through continued monitoring." The Operation and Maintenance Plan submittal is past due, and a schedule including submittal of this SRR should be provided. [Deficiency Type: D]

add a schedule comment

SPECIFIC COMMENTS

1. Page 1-1, Section 1, first paragraph. The SRR states that it has been prepared to satisfy the progress reporting requirements of the Order, but does not state whether it is intended to be a monthly, quarterly, or annual progress report. The SRR should clearly state whether this document is intended to satisfy the monthly, quarterly, or annual progress report requirements under Section XV of the ORDER. [Deficiency Type: D]

2. Page 1-3, Section 1.2, fourth paragraph, last sentence. This sentence states: "Soil investigation were conducted before and after the backfill operation as discussed below." The discussion presented below this statement only presents the earliest and latest investigations. No information is presented regarding the findings of these investigations, only the fact that they were performed. The SRR should present a discussion of these investigations or the above referenced sentence should be modified. [Deficiency Type: D]

3. Page 1-4, Section 1-3, third paragraph. The SRR states:

> In accordance with the Order, the RDD defined "contaminated soils" as those soils with TCE concentrations above 0.5 mg/kg based on laboratory analyses; soils with TCE concentrations at or below 0.5 mg/kg were defined as "clean soils."

The phrase "In accordance with the Order...", leads the reader to believe that EPA used the term "clean" to describe soils in which TCE was not detected. EPA has not used the term "clean" in reference to soils in this manner. The SRR should be modified to reflect that "clean soils" is BEI's terminology. [Deficiency Types: A, C]

4. Page 1-6, Section 1.4, last paragraph. The text does not discuss the key features of the statistical approach proposed in the September 1991 Proposed Final Remediation Design Document (RDD). The RDD indicated that the exploratory sampling grid approach was capable of detecting a five foot diameter hot spot at a probability of 80%, deemed acceptable in the RDD. The SRR should briefly present a discussion of the statistical approach and assumptions used in determining the location of hot spots. [Deficiency Type: D]

5. Page 2-1, Section 2.1, second paragraph. a) The use of the term triangular grid spacing is erroneous; the grid spacing is rectangular in shape. The terminology "triangular grid spacing" should be corrected. [Deficiency Type: C]

b) The RDD states that the grid spacing will be 5.6 feet plus or minus two feet. The SRR should indicate the variability in the grid spacing considered acceptable, and the impact of the variability in grid spacing on the ability to detect 5-foot diameter hot spots. [Deficiency Type: D]

c) The locations of the some of the exploratory borings presented in Figures 7 and 8 have been changed from that presented in the RDD. A discussion of the basis for changes in exploratory boring locations from those proposed in the RDD (Figures 5 and 6) and those installed (Figures 7 and 8) should be provided for each well location changed. [Deficiency Types: A, D]

6. Page 2-5, Section 2.5.1, third paragraph. The SRR states that ten percent of the samples were subject to additional analysis, but no description was given on how the samples submitted for additional analyses were chosen. The SRR states that these additional parameters were analyzed for documentation purposes. The SRR should indicate how the samples subject to additional analyses were chosen, clarify the objective "for documentation purposes", and discuss how the sampling and analysis of ten percent of the samples for additional parameters relates to the objective. [Deficiency Type: D]

7. Page 2-7, Section 2.5.3, second paragraph. The SRR states:

> Some of the samples submitted to the Laboratory were not designated for analyses, and were archived for possible future analyses and will be preserved by the Laboratory for one year.

The primary contaminants of concern, TCE and other VOCs, have relatively short holding times. The SRR does not adequately discuss the purpose for archiving samples, or identify which samples were archived. The SRR should discuss the purpose of archiving samples and discuss which samples were archived.

8. Page 2-7, Section 2.5.4. The SRR states that the QA/QC procedures were generally in accordance with those described in the QAPP, but does not describe specific deviations from the QAPP and corrective actions made. Sections 11.0 through 17.0 of the QAPP, which included a section titled "Corrective Actions" were omitted from the RDD. Typically, Corrective Actions sections of QAPPs provide procedures for reporting deviations from the QAPP. The SRR should discuss deviations from the QAPP and corrective actions made or should state that the procedures were in accordance with the QAPP. [Deficiency Type: D]

9. Page 2-7, Section 2.5.4.1. The SRR states that travel blanks were shipped with 16 of 18 sample shipments. The SRR should discuss why two of the 18 sample shipments did not contain travel blanks, and whether that was considered significant. [Deficiency Type: D]

10. Page 2-9, Section 2.6.2, second paragraph. The SRR mentions that the HNU field data is presented in Appendix B, but does not discuss the HNU results. HNU results were used in the field to make decisions regarding whether additional excavation should be performed. The HNU field results should be briefly discussed in the SRR. [Deficiency Type: D]

11. Page 2-9, Section 2.6.2, third paragraph. The SRR states:

> The results of the field analyses were used to select soil samples for laboratory analyses. In all cases, the laboratory samples included the sample show the highest TCE concentrations per field analyses.

The SRR does not indicate how the field information was used. It is not clear whether the sample with the highest TCE concentration was taken for each boring, hot spot, area or the site as a whole. The SRR does not indicate what the criteria was for determining which samples to submit for laboratory analyses other than the sample with the highest TCE concentration. The SRR should clarify how the field data were used to select soil samples for laboratory analyses. [Deficiency Type: D]

12. Page 2-10, section 2.6.3, second paragraph, page 2-12, Section 2.7.3, third paragraph, and page 3-17, Section 3.7.3, fourth paragraph. The results of the sample analyses for additional parameters are presented, but are not interpreted or discussed. A discussion of the analysis for additional parameters should be presented. [Deficiency Type: D]

13. Page 3-5, Section 3.4.1, fourth paragraph. The SRR states that perimeter monitoring locations were chosen based on the existing wind conditions; two upwind locations and three downwind locations were chosen. The SRR does not state what the wind conditions were and does not identify which of the monitoring locations were intended to be downwind or upwind (on Figure 14). The SRR should provide information on wind direction and the function of the various air monitoring locations. [Deficiency Type: D]

14. Page 3-10, Section 3.5.2, fifth paragraph. The SRR states:

> The two drums were moved to a temporary storage area,...

The SRR does not indicate whether the storage area was a permitted temporary storage area with appropriate regulatory approval. The SRR should indicate whether the drums were stored in a permitted storage area.

15. Page 3-11, Section 3.6.2, second paragraph. The SRR states that augerholes were excavated to a depth of approximately 16 feet based on groundwater level data. The groundwater level data used to determine the depth of exploratory boring and remedial excavation has not been presented in this SRR and should be presented to enable reviewers to evaluate the adequacy of the vertical extent of soil remediation. [Deficiency Type: D]

16. Page 3-11, Section 3.6.3. The SRR does not present the excavation sequence. This information should be provided.

17. Page 3-12, Section 3.6.4.1, second and third paragraphs. Some of the exploratory boring grid spacing is greater than 5.6 feet. In areas where grid spacing exceeds 5.6 feet, sampling density may be less than one laboratory sample per 50 feet as specified in the RDD. The SRR should clarify and discuss the effect of enlarged grid spacing on sampling density. [Deficiency Types: C, D]

18. Page 3-12, Section 3.6.4.1. third paragraph. The SRR states: "Therefore, no further analytical data would be required to verify the boundaries of the excavation as long as the excavation boundaries were extended to the exploratory boundaries already tested to be clean." In some areas, the excavated areas do not extend to the exploratory borings, leading to a potential to leave contaminated materials on-site. Additional confirmation sampling and analysis is recommended at the edge of excavations not extended to the exploratory borings. [Deficiency Types: C, D]

19. Page 3-13, Section 3.6.4.2, third paragraph. a) This section does not discuss photovac readings utilized in boundary monitoring, until the last sentence of this paragraph in reference to Appendix B. A discussion of how photovac readings were used in boundary monitoring should be presented.

b) Use of an HNU to determine the extent of soil contamination is not appropriate unless confirmed with analytical laboratory data. The extent of contamination should be confirmed through the laboratory analysis of additional soil samples, in areas where existing exploratory borings can not be used to characterize the acceptability of the extent of excavation. [Deficiency Type: D]

20. Page 3-14, Section 3.7.1. The SRR does not indicate where the temporary stockpiles for storage of potentially clean soils were located, and should present this information for documentation purposes. [Deficiency Type: D]

21. Page 3-18, Section 3.8.1, last paragraph. The SRR states that "the backfill material was considered better than the in-situ soils as far as vertical conduits are concerned." It is not clear what is meant by the term "better" in this sentence. Natural soils typically show a higher horizontal hydraulic conductivity compared to vertical conductivity as a result of depositional processes. Compacted randomly oriented fill material may show a significantly higher potential for vertical hydraulic conductivity compared to similar material unperturbed. Some discontinuities may be expected at the excavation boundary and backfill interface, which may act as conduits for vertical fluid migration. Remediation activities may have resulted in an increased potential for vertical fluid conductivity. The statement that backfill material may be "better" than in-situ soils as far as vertical conduits should be clarified and supported by technical data or removed. [Deficiency Type: C]

22. Page 3-18, Section 3.8.2, first paragraph. The SRR should describe why a tremie tube was not used for placement of concrete into the excavation holes, to allow for even filling, reduce gravitational separation, and minimize the potential for the development of void spaces. [Deficiency Type: D]

23. Page 3-20, Section 3.9.2.2, second paragraph. The SRR indicates that personal protective equipment was disposed of at a sanitary landfill. Personal protective equipment from hazardous waste remediation activities should be classified as hazardous waste and disposed of as such. Additional explanation should be provided justifying disposal of this material at a sanitary landfill. [Deficiency Type: D]

24. Page 3-20, Section 3.9.2.2, fourth paragraph. The SRR states: "The minimal washwater generated from the decontamination was swept and directed to the on-site sewer discharge point." This water should have been collected and tested with the rest of the water generated during remedial activities prior to discharge. The SRR should describe why the water used to decontaminate the asphalt pavement was not tested to determine acceptability for sewer discharge. [Deficiency Types: C, D]

25. Page 4-1, Section 4, seventh bullet. This bullet states that the exploratory borings were used to verify cleanup at the excavation boundary. The SRR states in earlier sections that a combination of data from these exploratory borings and field data from the excavations were utilized to confirm the excavations as "clean" in relation to TCE. The information presented in this bulleted item should be consistent with the rest of the SRR and should be corrected. [Deficiency Type: C]

26. Page 4-2, section 4, last bullet. The SRR states:

> No testing was required at the bottom of the excavations. The excavation was extended down to the groundwater, at a depth of about 16 feet below grade.

On page 3-11, Section 3.6.2, second paragraph, the SRR states:

> Each auger-hole was excavated from the ground surface to a depth of approximately 16 feet. This depth corresponds, approximately, to the top of the ground water as indicated by the exploratory borings, monitoring wells, and/or the relatively high moisture content of the soils near the bottom of each excavation.

The SRR should be consistent regarding the criteria utilized to determine the vertical extent of the excavation. [Deficiency Type: C]

27. Figure 7. a) The locations of exploratory borings R-4 and R-8 do not provide closure to the east of the hot spot surrounding soil boring 6. Excavation was proposed west of exploratory borings R-4 and R-8, with no confirmation sampling proposed in this area at the edge of the excavation (i.e., immediately adjacent to the building). The proposed excavation areas surrounding soil boring 6 and 104 do not extend out to the next exploratory wells to the east. Exploratory borings are intended to confirm the extent of excavation. Excavation boundaries should have been extended to exploratory borings in which TCE was not detected at levels exceeding the soil cleanup standards. Additional confirmation sampling and analyses is recommended at the edge of the excavations not extended to the exploratory borings. [Deficiency Type: C]

b) Two exploratory borings proposed in the RDD between previous soil borings 59 and 66, and previous soil borings 59 and 57 have been deleted. The SRR should provide a discussion of the rationale for changes in the amount and location of soil borings installed, compared to those proposed in the RDD. [Deficiency Type: D]

28. Figure 12. Figure 12 shows the actual extent of excavation in Area 1. The SRR indicates that the break in the buried waste line was discovered where the line entered the building. The location of the leak at the building edge may result in contaminant transport along the interface of the wall edge and the soil. Soil exploration and remediation along the edge of the building has not been adequately addressed, as illustrated below.

a) The proposed extent of excavation in Figure 7 shows excavation to include the area bounded by borings R-8, R-4 and the building wall. The SRR should provide a discussion why the actual extent of excavation presented in Figure 12 did not include the area bounded by borings R-8, R-4, and the building wall, as proposed in the RDD. [Deficiency Type: D]

b) Table 12 indicates that TCE concentrations in soil samples at exploratory borings R-9 and R-35 exceeded the soil cleanup standard of 0.5 ppm, indicating these borings cannot be utilized to document the extent of contamination at the excavation boundary. As shown on Figure 12, no additional soil boring or excavation was performed between borings R-9 and R-35, and the building wall. TCE contamination exceeding the action level was detected at exploratory soil boring R-6 located inside the building. Contamination in the vicinity of the wall edge may have migrated to exploratory boring R-6 without being detected by exploratory borings R-1 and R-7. The SRR should provide a rationale why the actual extent of excavation presented in Figure 12 did not include the area bounded by borings R-9, R-35, and the building wall. The limitations of the exploratory soil borings in defining the source area near the wall should be discussed. [Deficiency Type: D]

RECOMMENDATIONS

1. General Comment 1.. The extent of contamination should be confirmed through the laboratory analysis of additional soil samples, in areas where exploratory borings can not be used to characterize the acceptability of the extent of excavation. Additional confirmation sampling and analysis is recommended at the edge of excavations not extended to the exploratory borings where TCE was not detected above the action levels.

2. General Comment 2. Additional sampling is recommended directly adjacent to the building wall to determine if source areas remain where the waste line entered the building and in the area bounded by exploratory borings R-9, R-35, and the building wall.

3. General Comment 3. The SRR should indicate how the samples subject to additional analyses were chosen, clarify the objective "for documentation purposes", and discuss how the sampling and analysis of ten percent of the samples for the additional parameters relates to the objective. A discussion of the results of the analysis for additional parameters should be presented.

4. General Comment 4. The text should provide additional information justifying the disposal of personal protective equipment and washwaters as non-hazardous waste without testing.

5. General Comment 5. The groundwater level data used to determine the depth of exploratory boring and remedial excavation has not been presented in this SRR and should be presented to enable reviewers to evaluate the adequacy of the vertical extent of soil remediation.

6. General Comment 6. The SRR should discuss the relationship between sample depth and TCE concentration.

7. General Comment 7. The SRR should present plans for work planned for the next reporting period, with updated work schedules, including submittals.

8. Specific Comment 1. The SRR should clearly state whether this document is intended to satisfy the monthly, quarterly, or annual progress report requirements under Section XV of the ORDER.

9. Specific Comment 4. The SRR should briefly present a discussion of the statistical approach and assumptions utilized in determining the location of hot spots.

10. Specific Comment 5. a) The "triangular grid spacing" should be corrected.

b) The SRR should indicate the variability in the grid spacing considered acceptable, and the impact of the variability in grid spacing on the ability to detect 5-foot diameter hot spots.

c) A discussion of the basis for changes in exploratory boring locations from those proposed in the RDD (Figures 5 and 6) and those installed (Figures 7 and 8) should be provided for each well location changed.

11. Specific Comment 6. The SRR should indicate how the samples subject to additional analyses were chosen, clarify the objective "for documentation purposes", and discuss how the sampling and analysis of ten percent of the samples for additional parameters relates to the objective.

12. Specific Comment 7. The SRR should discuss the purpose of archiving samples and discuss which samples were archived.

13. Specific Comment 9. The SRR should discuss why two of the 18 sample shipments did not contain travel blanks, and whether that was considered significant.

14. Specific Comment 10. The HNU field results should be briefly discussed in the SRR.

15. Specific Comment 11. The SRR should clarify how the field data were used to select soil samples for laboratory analyses.

16. Specific Comment 12. A discussion of the analysis for additional parameters should be presented.

17. Specific Comment 13. The SRR should provide information on wind direction in the context of perimeter air monitoring and function of the various air monitoring locations.

18. Specific Comment 17. The SRR should clarify and discuss the effect of enlarged grid spacing on sampling density.

19. Specific Comment 18. Additional confirmation sampling and analysis is recommended at the edge of excavations not extended to the exploratory borings.

20. Specific Comment 19. a) A discussion of how photovac readings were used in excavation boundary monitoring should be presented.

b) The extent of contamination should be confirmed through the laboratory analysis of additional soil samples, in areas where exploratory borings can not be used to characterize the acceptability of the extent of excavation.

21. Specific Comment 23. Additional explanation should be provided justifying disposal of this contaminated personal protective equipment at a sanitary landfill.

22. Specific Comment 24. The SRR should describe why the water used to decontaminate the asphalt pavement was not tested to determine acceptability for sewer discharge.

23. Specific Comment 26. The SRR should be consistent regarding the criteria utilized to determine the vertical extent of the excavation.

24. Specific Comment 27. a) Excavation boundaries should have been extended to exploratory borings in which TCE was not detected in levels exceeding the soil cleanup standards. Additional confirmation sampling and analyses is recommended at the edge of the excavations not extended to the exploratory borings.

b) The SRR should provide a discussion of the rationale for changes in the amount and location of soil borings installed, compared to those proposed in the RDD.

25. Specific Comment 28. a) The SRR should provide a discussion why the actual extent of excavation presented in Figure 12 did not include the area bounded by borings R-8, R-4, and the building wall, as proposed in the RDD.

b) The SRR should provide a rationale why the actual extent of excavation presented in Figure 12 did not include the area bounded by borings R-9, R-35, and the building wall. The limitations of the exploratory soil borings in defining the source area near the wall should be discussed.

TABLE 1

Soil Remediation Report
(Compliance with Progress Report and Confirmatory Sampling Report Requirements)

Document	a	b	c	d	e	f
NEC Electronics Inc., 501 Ellis Street by Bechtel (March 1991)	Deficient: D See General Comment #7; and Specific Comments #16 and 20	Deficient: D See General Comment #5; and Specific Comments #13 and 15.	Deficient: D See General Comment #6.	Deficient: A, C, D See General Comments #1 and 2; and Specific Comments #5b, 5c, 9, 17, 18, 23, 24, 27, and 28.	Deficient: A, C, D See General Comments #2, 3, and 5; and Specific Comments #5b, 10, 11, 12, and 28.	Deficient: C, D See General Comments #1 and 2; and Specific Comment #18.

NOTES:

According to the CERCLA § 106 Order, Section IX.D 2.d, Progress Reports shall detail Facility Specific Work. According to Section XV, at a minimum, Progress Reports shall:

a) describe the actions which have been taken to comply with this Order during the prior month, including a general description of activities commenced or completed during the reporting period;

b) include all results of sampling and tests and all other data received by Respondent and not previously submitted to EPA;

c) describe all Work planned for the next reporting period, with updated schedules that show overall Work completed, Work planned for the next reporting period, and the overall project schedule for Work completion;

d) describe all problems encountered and any anticipated problems, any actual or anticipated delays, and

e) include an interpretation or explanation of the data.

According to Section IX D.2 f, a Confirmatory Sampling Report shall:

f) be submitted for EPA approval at the conclusion of soil remediation activities

Deficiency Types

A Statements that attempt to circumvent EPA's authority or limit discretion in the future by either (i) implying that Respondents, and not EPA, are permitted to make decisions concerning the completeness of the work, or (ii) limiting the scope of the work described in the CERCLA § 106 Order

B Soil Remediation Report that is not based upon past data, or, where the past data are limited, that fails to specify a sampling strategy.

C Soil Remediation Report that includes unsubstantiated technical statements and conclusions

D Insufficient information.

E Technical document having the appearance of being written by either the Respondent, the Respondent's attorney, or both, not the consultant.

F Technical document that is filled with opinions that are presented as statements of fact

Deficiency Types:

- A Statements that attempt to circumvent EPA's authority or limit discretion in the future by either (i) implying that Respondents, and not EPA, are permitted to make decisions concerning the completeness of the work, or (ii) limiting the scope of the work described in the CERCLA § 106 Order.
- B Soil Remediation Report that is not based upon past data or, where the past data are limited, that fails to specify a sampling strategy
- C Soil Remediation Report that includes unsubstantiated technical statements and conclusions.
- D Insufficient information.
- E Technical document having the appearance of being written by either the Respondent, the Respondent's attorney, or both, not the consultant.
- F Technical document that is filled with opinions that are presented as statements of fact.